



STATE OF TENNESSEE  
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
**DIVISION OF WATER RESOURCES**

Memphis Environmental Field Office  
8383 Wolf Lake Drive  
Bartlett, TN 38133  
Phone 901-371-3000    Statewide 1-888-891-8332    Fax 901-371-3170

April 22, 2015

Mr. Rick McClanahan  
Director of Utilities and Engineering  
City of Bartlett  
3585 Altruria Road  
Bartlett, TN 38135

Re:    Compliance Evaluation Inspection  
      Bartlett Sewage Treatment Plant (STP) #1  
      NPDES Permit No. TN0066800  
      Shelby County  
      Bartlett STP Biosolids Operation and Management  
      State Operation Permit For Land Application of Biosolids No. TNB066800  
      Tipton County

Dear Mr. McClanahan:

On Tuesday, April 7, 2015, Mr. Eddy Bouzeid with the Division of Water Resources, Memphis Environmental Field Office (DWR/MEFO), conducted a Compliance Evaluation Inspection (CEI) of both the Bartlett Sewage Treatment Plant (STP) #1 and the Plant's Biosolids Operation and Management. Upon arrival at the STP facility, Mr. Bouzeid met with Mr. Larry Gamblin, the Bartlett STP Certified Operator, and stated that the purpose of the inspection was to evaluate the facility's compliance with its National Pollutant Discharge Elimination System (NPDES) and Biosolids State Operating Permit. This was accomplished by reviewing the facility's self-monitoring records and reports and subsequently conducting an inspection of the facility and the land application site. Attached you will find the State Water Compliance Inspection Reports for both permits, which summarize the findings of the CEI. The following are items to note regarding the inspection:

1. The facility reported five exceedances of its permit limits for the period from May 2013 through March 2015. As noted on the DMRs one exceedance in September 2013 was attributed to a lab error and the other exceedances were attributed to heavy rain fall and during the maintenance of one of the clarifiers in September and November 2014.

2. On January 30, 2015, Mr. Bob Odette and Mr. Bouzeid conducted an audit of the Bartlett's biosolids management. During the meeting, Mr. Gamblin stated that the biosolids generated in the fall of 2014 had not been land applied at the Add Van Farms. Mr. Odette advised Mr. Gamblin that the recommended staging period is seven to ten days, and for long term storage, he strongly recommended that Bartlett adhere to the biosolids storage guidance found in EPA 40 CFR 503 rules. In a letter to Mr. Odette dated February 4, 2015, The City of Bartlett proposed covering all biosolids taken to the application site within seven days of delivery with plastic tarp material until ready to apply. Mr. Odette approved the proposal on February 12, 2015.

During the inspection, Mr. Bouzeid and Mr. Gamblin visited the Add Van Farms in Tipton County, the land application site, and confirmed that the biosolids generated in the fall of 2014 have not yet been land applied nor was the area covered. Mr. Gamblin stated that the wet weather had hindered the land application activities. He informed Mr. Bouzeid that the biosolids generated in the spring of 2015 will not be delivered to the land application site until the staged biosolids from the fall of 2014 have been land applied.

The Division strongly recommends that the biosolids that will be delivered to the Add Van Farms land application site be staged no longer than seven to ten days. If the material must be staged longer than this time frame, the material should be covered to restrict the potential movement of pathogens and minimize the mineralization of the biosolids.

3. On January 8, 2015, the Enforcement and Compliance Unit with the Division issued the Bartlett STP a Notice of Violation for several late submittals of DMRs. The DMRs for July, August and October 2014 were postmarked later than 15 days after completion of the reporting period.
4. A review of the annual report revealed that the latitude and longitude for the land application site was not provided. Section 3.4.1 of the general permit, "Contents of the Annual Report", requires that this information be included in the report. Please ensure that future annual reports contain all required information, including but not limited to, the specific latitude and longitude coordinates of the land application location(s).
5. A recent review of the Notice of Intent (NOI) for the biosolids land application received by the Division on June 27, 2014, revealed that the longitude/latitude coordinates were incorrect. Mr. Bouzeid contacted Mr. Gamblin and advised him to resubmit a revised application with the correct coordinates. On April 21, 2015, Mr. Gamblin submitted a revised NOI with the correct coordinates.

Based on the actual land application location please be aware that the runoff from the application site enters Hodges Creek a tributary of Indian Creek. Indian Creek is on the State's 303(d) List of impaired waters for E. Coli and Phosphorous. Please be advised that the land application procedures and the staging operation must be conducted in compliance with Section 3.2.1 of the permit which states in part: "The land application of non-EQ biosolids shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Non-EQ biosolids shall not be land applied unless all setbacks are

met.” The proper operations and management of the land application site is imperative to ensure that runoff from the site doesn’t not contribute to the impaired status of Indian Creek or cause Hodges Creek to become impaired.

The Division appreciates the cooperation and assistance of Mr. Gamblin during the inspection and the City’s continues efforts to comply with its NPDES and Biosolids State Operation Permit requirements. If you have any questions or comments with regard to the inspection please contact Mr. Eddy Bouzeid at (901) 371-3023 or [eddy.bouzeid@tn.gov](mailto:eddy.bouzeid@tn.gov).

Sincerely,



Joellyn Brazile  
Environmental Program Manager  
Division of Water Resources  
Memphis Environmental Field Office

Enclosures: Compliance Inspection Reports, Photographs

cc: TDEC/DWR/NCO, Enforcement & Compliance  
TDEC/DWR/MEFO – File



## TDEC - Division of Water Resources

## ICIS NPDES Facilities Inspection Report

## Facility Data

NPDES ID:	TN0066800	Facility Site Name	Bartlett STP #1	
		Address	5258 Shelter Run Lane, Bartlett, Shelby County, Tennessee	
Permit Eff. Date:	Nov 1, 2013	Permit Exp Date:	Sep 30, 2017	SIC Code:

## Compliance Monitoring Information

Compliance Monitoring Activity Name	Compliance Evaluation (non-sampling) (CEI)		
	* If Bio Monitoring is selected above, select the method used:		
Compliance Monitoring Activity	Evaluation		

## Compliance Monitoring Dates/Times

Entry Date/Time (mm/dd/yyyy hh:mm):	4/7/2015 7:30	Exit Date/Time (mm/dd/yyyy hh:mm):	4/7/2015 12:30
-------------------------------------	---------------	------------------------------------	----------------

## Facility Representatives

Larry Gamblin (901) 385-6451 / Certified Operator	Rick McClanahan (901) 385-6499 / Director of Engineering
On-Site Representative(s) Title, Phone Number	Responsible Official(s), Title, Phone Number

## Statute and Section Information

Federal Statute:	CWA - Clean Water Act	State Statute:	Tennessee Water Quality Control Act
Programs:	NPDES- Base Program (Limits, Reporting, & Schedule)		
Compliance Monitoring Reason:	Core Program		
Compliance Monitoring Agency Type:	State	Agency Name:	TDEC - DWR
Did EPA assist/ Inspection?	No	Time Physically conducting activity: Days:	1
		Hours:	
Inspection Type:	State	Compliance Monitoring Action Outcome:	
Lead Agency:	State	Compliance Monitoring Rating Code:	
If Joint Inspection, what was the purpose of the other party?			

## Areas Evaluated During Inspection (Check only those areas evaluated)

<input checked="" type="checkbox"/> Permit	<input checked="" type="checkbox"/> Self - Compliance Program	<input type="checkbox"/> Pretreatment
<input checked="" type="checkbox"/> Records / Records	<input checked="" type="checkbox"/> Compliance Schedule	<input type="checkbox"/> Pollution Prevention
<input checked="" type="checkbox"/> Facility Site Review	<input checked="" type="checkbox"/> Laboratory	<input type="checkbox"/> Storm Water
<input checked="" type="checkbox"/> Effluent / Receiving Waters	<input checked="" type="checkbox"/> Operations & Maintenance	<input type="checkbox"/> Combined Sewer Overflow
<input checked="" type="checkbox"/> Flow Measurement	<input checked="" type="checkbox"/> Sludge Handling / Disposal	<input type="checkbox"/> Sanitary Sewer Overflow

## Compliance Monitoring Summary

See attached inspection report and/or letter.
---

## EPA and State Representatives

Inspector's Signature	TDEC/DWR/MEFO (901) 371-3023	Date
Manager's Signature	TDEC/DWR/MEFO (901) 371-3025	Date

(Note: This form can only be printed to an XPS document, then saved for later use.)

**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION**

**Division of Water Resources**

Memphis Environmental Field Office, 8383 Wolf Lake Drive, Bartlett, TN 38133

1-888-891-8332 (TDEC)

**Compliance Inspection for Individual NPDES Permit**

<b>Facility Name:</b> Bartlett STP #1	<b>NPDES Tracking Number:</b> TN0066800
<b>Permit Effective Date:</b> November 1, 2013	<b>Permit Expiration Date:</b> September 30, 2017
<b>Date and Time of Inspection:</b> 4/7/2015	<b>Inspector Name:</b> Eddy Bouzeid

<b>Official Contact Person Name:</b> Rick McClanahan, Director of Utilities and Engineering	
<b>Address:</b> 3585 Altruria Road, Bartlett, TN 38135	<b>Phone Number:</b> (901) 385-6451
	<b>Email:</b> rmccclanahan@cityofbartlett.org

**Summary of Findings and Comments**

On Tuesday, April 7, 2015, Eddy Bouzeid with the Division of Water Resources, Memphis Environmental Field Office (DWR/MEFO), conducted a Compliance Evaluation Inspection (CEI)-at the Bartlett Sewage Treatment Plant (STP) #1 located in Shelby County and at the plant's biosolids and application site which is located in Tipton County, Tennessee. This report will include the CEI findings for the STP #1. The CEI findings for the plant's biosolids operation and management is documented separately.

Mr. Bouzeid met with Mr. Larry Gamblin, the certified wastewater operator, and reviewed the treatment system's monitoring records and discussed its self-monitoring program. Afterwards, Mr. Bouzeid and Mr. Gamblin inspected the treatment plant. The following is a summary of the findings and observations:

**I. Permit**

The NPDES permit for the Bartlett STP #1 with tracking number TN0066800 expires on September 30, 2017. A copy of the NPDES permit was in a binder at the plant's laboratory.

The NPDES permit authorizes the discharge of treated wastewater effluent into the Loosahatchie River at mile 18.4.

The design capacity of the treatment system is 2.2 Million Gallons per Day (MGD). From May 2013 through March 2015, the average effluent flow from the treatment system was 1.06 MGD and the maximum flow was 2.76 MGD, recorded in September 2014. The maximum flow was due to a historic rain event on September 11, 2014. The City of Bartlett received approximately 7.5 inches of rainfall in about 2.5 hours.

## II. Records/Reports

Site records and reports for the treatment system were observed and appeared to be maintained as required by the NPDES permit. Sampling and analytical data, including flow records, Discharge Monitoring Reports (DMRs) and Monthly Operation Reports (MORs) for the period from May 2013 through March 2015 were reviewed and appeared to be complete.

## III. Facility Site Review

The Bartlett STP consists of two main lift stations at the head of the plant, followed by a headwork building that houses the bar screen (photo 1). From the headwork, the wastewater is pumped to two oxidation ditches for intensive aeration (photo 2). From the oxidation ditches the treated wastewater is clarified via two secondary clarifiers (photo 3), then disinfected using ultraviolet (UV) lights (photo 4) before being discharged.

The overflow weirs from the clarifiers were clean at the time of the inspection (photo 5). According to Mr. Gamblin, the weirs are cleaned once a week to prevent algae and solids accumulation.

The Bartlett STP had five exceedances of its permit limits for the period from May 2013 through March 2015 (see table 1).

**Table 1**

Parameter	Limit (daily max)	Date	Result
TSS	45 mg/l	September 13, 2013	148 mg/l
TSS	45 mg/l	September 11, 2014	59 mg/l
Settleable Solids	1 mg/l	September 11, 2014	10 mg/l
TSS	45 mg/l	November 25, 2014	57 mg/l
Settleable Solids	1 mg/l	November 25, 2014	2 mg/l

The following information was submitted with the DMRs and pertained to the permit exceedances:

1. **September 2013:** The exceedance was attributed to a lab error since the STP was operating at normal conditions, and that the TSS results for the day before and after, September 12 and 14, were within permit limits.
2. **September 2014:** The exceedances were attributed to a historic rain event on September 11, 2013, and by having one of the clarifiers out of service for maintenance. The City of Bartlett received approximately 7.5 inches of rainfall in about 2.5 hours.

3. **November 2014:** The exceedances were attributed to a heavy rainfall on the morning of November 25, 2014 which caused a small amount of solids to enter the effluent, and by having one of the clarifier out of service for maintenance.

#### **IV. Effluent/Receiving Waters**

The effluent from the STP's concrete structure was clear (photo 6). The odor at the time of the inspection was minimal.

The access road to the outfall was under water during the inspection which prohibited the inspection of the NPDES sign as well as the discharge pipe into the Loosahatchie River. Therefore, Mr. Gamblin agreed to provide Mr. Bouzeid with photos of the sign (photo 7) taken in October 2014. The information on the sign was correct.

#### **V. Flow Measurement**

The plant has two digital flow measurement devices for the influent and effluent. The devices were functioning at the time of the inspection (photos 8 and 9). The devices are calibrated annually by LabTronX from Nashville, an independent contractor. The certificates for the calibrations by LabTronX were available at the plant's laboratory. The devices were last calibrated on October 29, 2014.

#### **VI. Self-Compliance Program**

The Bartlett STP has automatic flow proportional samplers for the influent and effluent as required by the permit (photos 10 and 11). The automatic samplers are capable of providing adequate refrigeration during the sampling period. Each sampler is equipped with a control bottle and a thermometer. The readings on the thermometers in the samplers were 4 degrees Celsius at the time of the inspection, which is below the 6 degrees Celsius required by the permit.

The automatic samplers are able to collect a large enough sample for all parameter analyses. The individual sampler is set up to collect 200 ml per individual sample which is in accordance with EPA's Operating Procedure for Wastewater Flow Measurement. EPA's operating procedure mandates that the individual sample aliquot be at least 100 ml in volume. Verification of the set-up volume was observed during the inspection.

The plant's electrical outlets are used to operate the samplers for the time required to complete the sampling. The Bartlett STP has a back-up generator for use during power outages. According to Mr. Gamblin, the emergency generator is tested weekly.

According to Mr. Gamblin, Bartlett lab technician collects composite samples of the influent and the effluent for analysis. The analyses for BOD, total suspended solids, ammonia nitrogen and E. Coli, total nitrogen and total phosphorous are conducted at ETC laboratory, a commercial laboratory in Memphis.

Dissolved oxygen (DO), settleable solids, temperature and pH are effluent parameters routinely measured by the lab technician at the time of sample collection as mandated by Section 1.2.4 of the NPDES permit.

A review of the chain-of custody revealed that the samples shipped to ETC in a cooler were maintained below the 6 degrees Celsius as required by 40 CFR, Part 136.

Bartlett STP also conducts annual biomonitoring (IC 25 Static Renewal 7-Day Chronic Ceriodaphnia and Pimephales) of its effluent. Two biomonitoring tests were conducted for the evaluation period from May 2013 through April 2015. One biomonitoring test was conducted in July 2013 and the second in September 2014. Both biomonitoring tests met the value set forth in the NPDES permit.

On January 8, 2015, the Enforcement and Compliance Unit with the Division issued the Bartlett STP a Notice of Violation for several late submittals of DMRs. The DMRs for July, August and October 2014 were postmarked later than 15 days after completion of the reporting period.

## **VII. Compliance Schedule**

The treatment system is not under any compliance schedule at this time, with the exception of the permit requirements.

## **VIII. Laboratory**

Records indicate that all laboratory analyses were conducted at ETC laboratory in Memphis.

A Standard Operating Procedure (SOP) for field parameter measurement and laboratory analysis of samples was available for review at the STP. The SOP encompasses: sampling procedures; instructions on proper calibration of field equipment; QC procedures for equipment calibration; and QC procedures for lab analysis conducted at the plant.

Calibration of the pH and DO meters was observed. The calibration logs were also inspected and the calibrations were properly documented. Three buffers (4, 7 and 10) are utilized in the calibration of the pH meter. The DO meter was calibrated according to the instructions noted in the manufacturer's manual.




**IX. Operations and Maintenance**

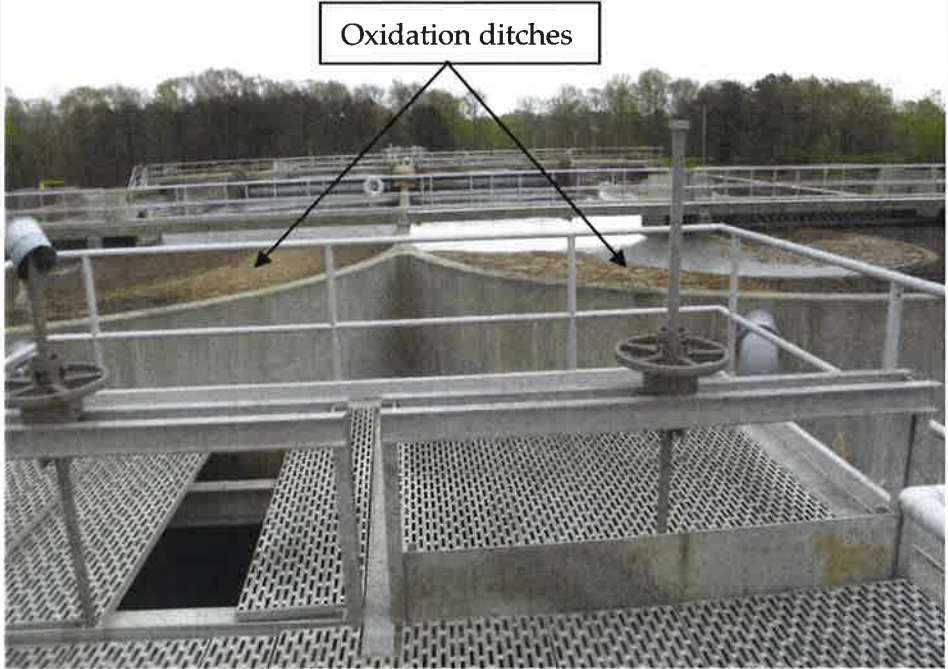
The treatment system appeared to be operating properly at the time of the inspection.

**X. Sanitary Sewer Overflow**



Should sanitary sewer overflows occur they are reported on a monthly basis with the DMRs as required by the permit. A total of five overflows were reported during the evaluation period from May 2013 through March 2015. All five overflows occurred on September 11, 2014, when the City of Bartlett received 7.5 inches of rainfall in about 2.5 hours.

## Photographic Log

<b>Client or Facility Name:</b> Bartlett STP #1		<b>Site Location:</b> Bartlett, Shelby County	<b>Tracking No.:</b> TN0066800
<b>Photo No.</b> 1	<b>Date</b> 4-7-2015		
<b>Description</b> View of bar screen at headwork			



<b>Photo No.</b> 2	<b>Date</b> 4-7-2015		
<b>Description</b> View of oxidation ditches			

## Photographic Log

<b>Client or Facility Name:</b> Bartlett STP #1		<b>Site Location:</b> Bartlett, Shelby County	<b>Tracking No.:</b> TN0066800
<b>Photo No.</b> <div style="text-align: center;">3</div>	<b>Date</b> <div style="text-align: center;">4-7-2015</div>		
<b>Description</b> View of one of the secondary clarifiers			
<b>Photo No.</b> <div style="text-align: center;">4</div>	<b>Date</b> <div style="text-align: center;">4-7-2015</div>		
<b>Description</b> View of the Ultraviolet lights			




## Photographic Log

<b>Client or Facility Name:</b> Bartlett STP #1		<b>Site Location:</b> Bartlett, Shelby County	<b>Tracking No.:</b> TN0066800
<b>Photo No.</b> <div style="text-align: center; border: 1px solid black; width: 40px; margin: 0 auto;">5</div>	<b>Date</b> <div style="text-align: center; border: 1px solid black; width: 100px; margin: 0 auto;">4-7-2015</div>		
<b>Description</b> Close-up view of the clarifier (from photo 3) overflow weir			
<b>Photo No.</b> <div style="text-align: center; border: 1px solid black; width: 40px; margin: 0 auto;">6</div>	<b>Date</b> <div style="text-align: center; border: 1px solid black; width: 100px; margin: 0 auto;">4-7-2015</div>		
<b>Description</b> View of effluent from the STP concrete structure. The effluent sample is taken from the flume prior to discharging to the Loosahatchie River.			


## Photographic Log


<b>Client or Facility Name:</b> Bartlett STP #1		<b>Site Location:</b> Bartlett, Shelby County	<b>Tracking No.:</b> TN0066800
<b>Photo No.</b> 7	<b>Date</b> 4-7-2015		
<b>Description</b> View of the sign at outfall 001 at the Loosahatchie River provided by Mr. Gamblin with the City of Bartlett.			

<b>Photo No.</b> 8	<b>Date</b> 4-7-2015	
<b>Description</b> View of the influent digital flow device. At the time of the inspection, this device was functioning properly.		




## Photographic Log

<b>Client or Facility Name:</b>		<b>Site Location:</b>	<b>Tracking No.:</b>
Bartlett STP #1		Bartlett, Shelby County	TN0066800
<b>Photo No.</b>	<b>Date</b>		
9	4-7-2015		
<b>Description</b> View of the effluent digital flow device. At the time of the inspection, this device was functioning properly.			

<b>Photo No.</b>	<b>Date</b>	
10	4-7-2015	
<b>Description</b> View of the influent composite sampler. At the time of the inspection, it appears that this device was properly maintained.		

## Photographic Log

<b>Client or Facility Name:</b> Bartlett STP #1		<b>Site Location:</b> Bartlett, Shelby County	<b>Tracking No.:</b> TN0066800
<b>Photo No.</b> 11	<b>Date</b> 4-7-2015		
<b>Description</b> View of the effluent composite sampler. At the time of the inspection, it appears that this device was properly maintained.			